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(54) **STRESS COMPENSATION SYSTEMS AND METHODS IN DIFFERENTIAL SENSORS**

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CPC ***G01D 3/021*** (2013.01)

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CPC G01R 33/0029; G01R 33/0082; G01R 33/0023; G01D 3/0365; G01D 3/036; G01D 3/021; G01D 18/00; G01D 18/008; G01L 9/065; G01L 19/02; G01L 25/00; G01L 1/26; G01L 27/002; H03M 1/06
See application file for complete search history.

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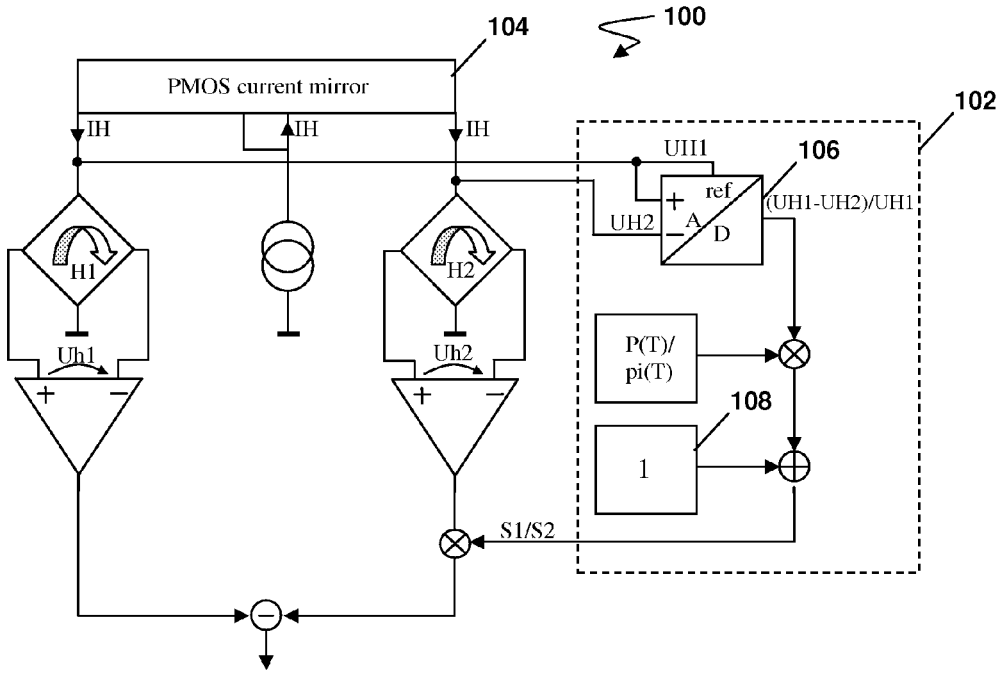
(57) **ABSTRACT**

Embodiments relate to stress compensation in differential sensors. In an embodiment, instead of compensating for stress on each sensor element independently, stress compensation circuitry aims to remove stress-related mismatch between two sensor elements using the sensor elements themselves to detect the mismatch. A circuit can be implemented in embodiments to detect mechanical stress-related mismatch between sensor elements using the sensor elements, and tune the output signal by a compensation factor to eliminate the mismatch. Embodiments are therefore less complicated and less expensive than conventional approaches. While embodiments have applicability to virtually any differential sensor, including magnetic field, pressure, temperature, current and speed, an example embodiment discussed herein relates to magnetic field.

16 Claims, 2 Drawing Sheets



Difference-stress compensated total signal Uh1 – (S1/S2)*Uh2